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Hints of 2 Chinese Reactors Lead U.S. to Upgrade Estimates

By JACK RAYMOND

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WASHINGTON, Oct. 19—United States intelligence reports indicate that Communist China may have two atomic reactors turning out plutonium for nuclear weapons.

The information is not considered conclusive. But United States intelligence agencies, which originally overestimated the time China would take to set off its first atomic device, are now revising their estimates of China's capability to produce atomic weapons.

The element plutonium is associated with experimental nuclear devices because uranium 235, used in advanced devices, occurs in nature in small quantities. For a nation lacking a strong industrial base, plutonium is easier to produce than uranium.

With two plutonium production reactors, China would have enough fissionable material to produce several bombs a year. It may also have enough plutonium left from its first explosion last Friday for a second test soon, intelligence sources speculated.

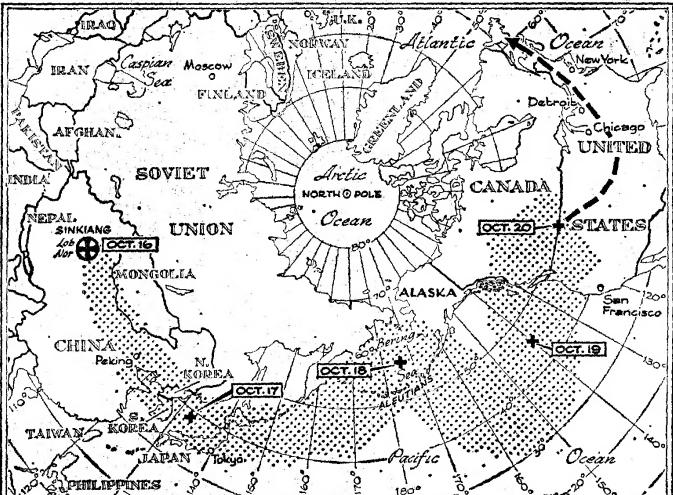
This revised estimate of China's plutonium-production capability was one reason for a statement yesterday by Secretary of State Dean Rusk, that there might be a second explosion.

Originally China was thought able to produce only enough plutonium for a single crude atomic device. But the first explosion, with a yield of 10 to 20 kilotons—equivalent to 10,000 or 20,000 tons of TNT—was much larger than expected by many American officials. Thus only a small amount of plutonium was used.

This, combined with the revised estimates of China's plutonium output, leads some high officials to predict that China will be able to set off a second explosion.

This prediction is also based on reports of continuing activity at the Chinese test site in Sinkiang Province, near the Soviet border, although the activity is less intense than it was before the test last week. Some Chinese weather stations that would monitor the radioactive fallout remain on alert, and there is continuing air traffic in and around the test site.

The radioactive cloud from the Chinese explosion was expected, by the United States Weather Bureau to reach the northwestern United States imminently.



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Dotted area shows the path of a radioactive cloud from the nuclear test in China. The dates give arrival times of the dust, with the broken line its expected route.

size and type as the ones that were exploded at Alamogordo, N. M., in July, chemical analysis, which is expected to be completed this week. The plutonium device is more

difficult to explode than the uranium type dropped on Hiroshima.

Through reconnaissance by aircraft and perhaps satellites, it has been established that China is operating a plutonium-reactor center near Paotow, in Inner Mongolia.

From pictures of the rectangular buildings, it is difficult to establish how many reactors have been built and whether they are operating. Additional clues have been obtained by measurement of trace amounts of argon and xenon, gases given off in the production and separation of plutonium.

Dr. Lester Machta, the bureau's fallout specialist, estimated that the cloud of radioactive debris had been sent 30,000 feet high by the explosion. At that altitude, the cloud has been carried rapidly across the Pacific by the jetstream at speeds exceeding 100 miles an hour.

The cloud is expected to pass tomorrow through the Central United States and then over the northeastern boundary into Canada.

Intelligence agencies and the Atomic Energy Commission have awaited the radioactive cloud as a clue to the nature of the Chinese explosion.

As the cloud passed over China and over the Pacific Ocean Friday evening, samples of the debris were gathered by reconnaissance airplanes such as the U-2, the RB-57 and the RB-50, with air filters mounted on their wings.

The samples were then flown to laboratories such as one operated by the Air Force Technical Applications Center at Travis Air Force Base, near San Francisco.

Test of U.S. Theories

Chemical analysis of the debris makes it possible to determine the size of the device, how it was made and the complexity of its design.

American officials believe that the Chinese used a plutonium device about the same